Southern Crossroads (SoX)

MS-CC Workshop–October 29, 2024

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SoX Southern Crossroads

Georgia Tech

What is Southern Crossroads-SoX?

Southern Crossroads (SoX)

- **Also known as Southern Light Rail** (SLR)
- 501(c)3 organization that serves the Southeastern U.S. Research and Education community.
- SoX provides highspeed, global connectivity and other commodity services.
- Serves as the Southeast connector to Internet2, ESnet and other major U.S as well as International research networks.
- The regional network connecting AL, GA, SC, TN, with national research and education backbones.

SoX
Southern Crossroads

Affiliate organization of Georgia Tech

- SoX partners with Georgia Tech to push forward strategies that each organization is working toward.
- Georgia Tech has strategic goals to “connect globally” and to “expand access”.
- Goals and Mission align: Provide reliable cyberinfrastructure, high-performance global connectivity, and services.
- Enables collaboration and partnerships for our community.

THE GEORGIA INSTITUTE OF TECHNOLOGY · SEAL · 1885 · PROGRESS AND SERVICE

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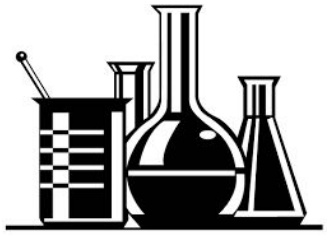
Who does SoX serve?



- Colleges and universities
- K-12 education networks
- Federal agencies
- Government laboratories and non-profit institutions that promote research in the Southeast region of the United States.
- SoX core services are enabled from Atlanta, GA and Nashville, TN

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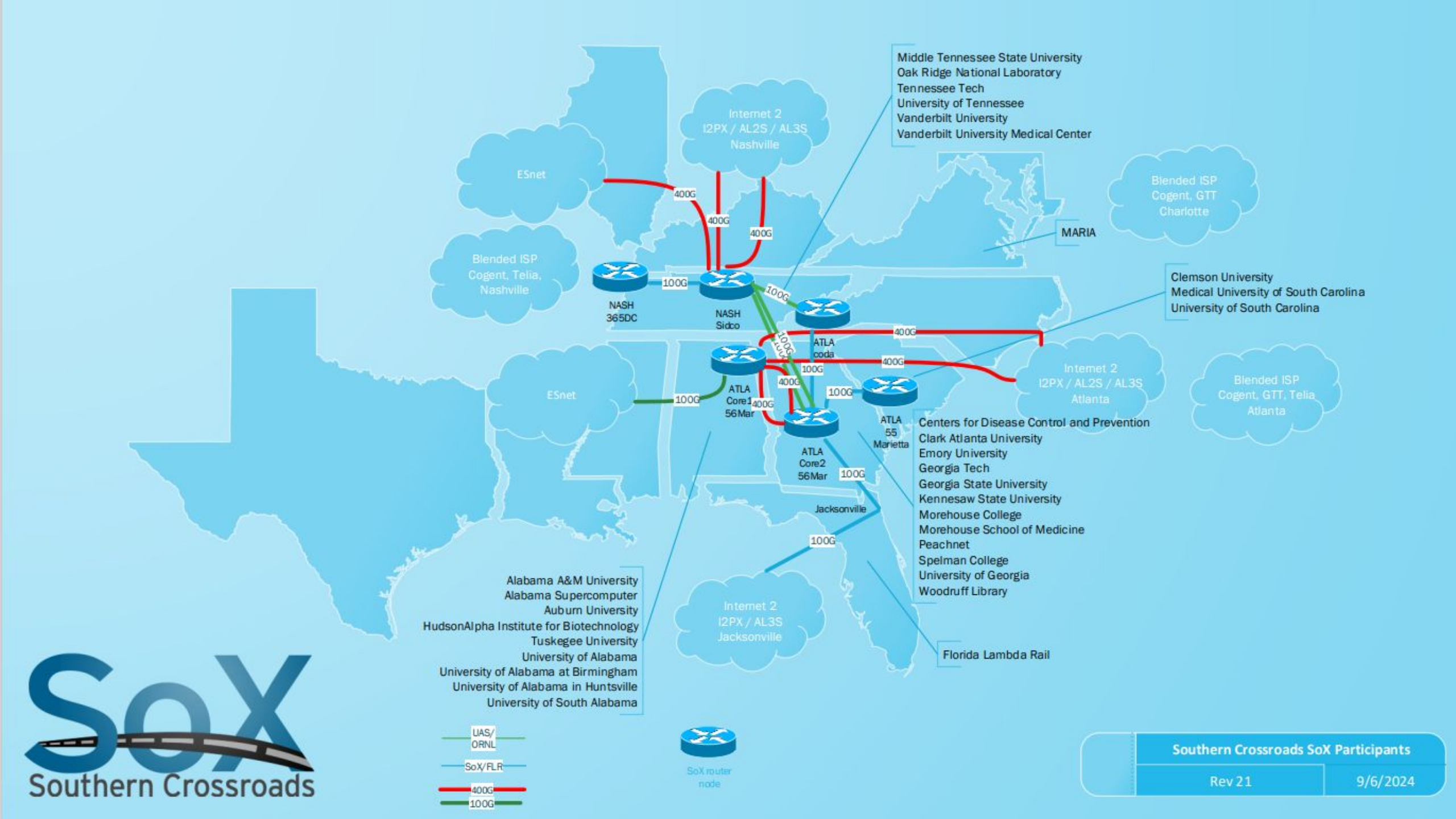
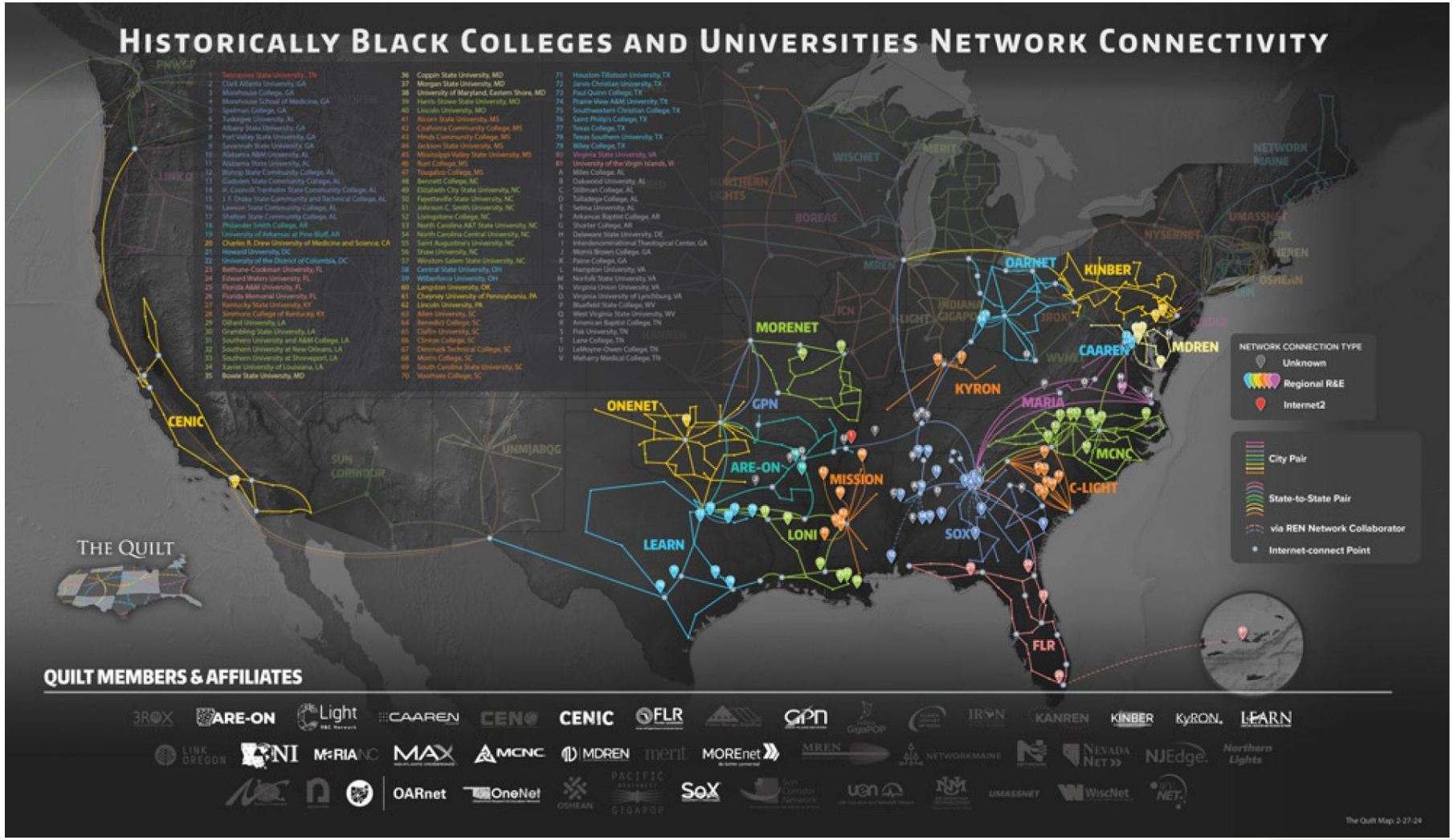

Middle Tennessee State University
Oak Ridge National Laboratory
Tennessee Tech
University of Tennessee
Vanderbilt University
Vanderbilt University Medical Center
Internet 2
I2PX / AL2S / AL3S
Nashville
ESnet
Blended ISP
Cogent, Telia,
Nashville
Blended ISP
Cogent, GTT
Charlotte
MARIA
400G
100G
NASH
365DC
NASH
Sidco
ATLA
coda
Clemson University
Medical University of South Carolina
University of South Carolina
ESnet
ATLA
Core1
56Mar
ATLA
Core2
56Mar
ATLA
55
Marietta
Internet 2
I2PX / AL2S / AL3S
Atlanta
Blended ISP
Cogent, GTT, Telia
Atlanta
Centers for Disease Control and Prevention
Clark Atlanta University
Emory University
Georgia Tech
Georgia State University
Kennesaw State University
Morehouse College
Morehouse School of Medicine
Peachnet
Spelman College
University of Georgia
Woodruff Library
Jacksonville
Internet 2
I2PX / AL3S
Jacksonville
Florida Lambda Rail
Alabama A&M University
Alabama Supercomputer
Auburn University
HudsonAlpha Institute for Biotechnology
Tuskegee University
University of Alabama
University of Alabama at Birmingham
University of Alabama in Huntsville
University of South Alabama
UAS/
ORNL
SoX/FLR
400G
100G
SoX router
node
SoX
Southern Crossroads
Southern Crossroads SoX Participants
Rev 21
9/6/2024

THE QUILT: What it is and What it does

- Through The Quilt, non-profit regional research and education networks (like SoX) collaborate to develop, deploy and operate advanced cyberinfrastructure that enables innovation in research and education.
- Nearly 50 members and affiliates across the US.
- SoX is a Quilt member



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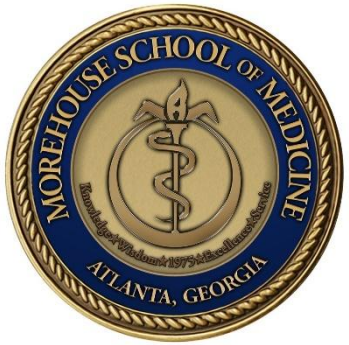
SoX and HBCUs

LOOK WHO'S CONNECTING...



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Our Team

Cas D'Angelo

IT Professional
Georgia Tech

President
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Natalie Palmer

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Georgia Tech

Vice President
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IT Professional
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Lead Engineer
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Assistant Treasurer
Southern Crossroads

Melanie Paulina

Administrative Operations Specialist
Georgia Tech

Assistant Secretary
Southern Crossroads

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NSF Campus Cyberinfrastructure Award ID: 2346630

CC* Regional Networking: Advancing Research and Education at small colleges in Rural and Metropolitan Alabama and Tennessee through IT Architecture Enhancements

Project Period: June 1, 2024 - May 31, 2026

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U.S. National Science Foundation

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NSF Award# 2346630: CC* Regional Networking: Advancing Research and Education at small colleges in Rural and Metropolitan Alabama and Tennessee through IT Architecture Enhancements

- Bringing advanced networking campus cyberinfrastructure to under-resourced colleges and universities in Tennessee and Alabama.
- Regional science DMZ and measurement instrumentation to facilitate data movement
- Training and workshops for IT, faculty, researchers, and students

Alabama State University 1867

Jacksonville State University 1883

Fisk University 1866

Meharry Medical College Worship of God Through Service to Mankind 18 76 Nashville Tennessee

Tennessee State University Think Work Serve Nashville

NSF CC* QUAD CHART
APRIL 19, 2024

Quad Chart for:

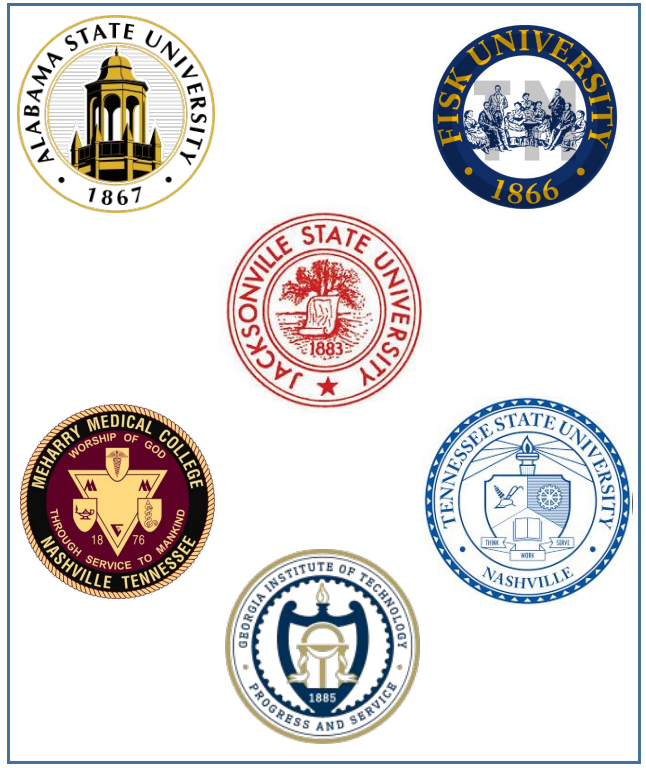
NSF Award# 2346630: CC* Regional Networking: Advancing Research and Education at small colleges in Rural and Metropolitan Alabama and Tennessee through IT Architecture Enhancements

Challenge Project Seeks to Address:

- Enhancing network connectivity to under-resourced Colleges and Universities
- Connect to regional, national, and international networks for collaboration, compute resources, access to instruments, and instructional resources

Solution(s) or Deliverables:

- Provide equipment and 10G circuits for enhanced networking at 5 under-resourced campuses
- Measure performance at each campus and enable regional science DMZ
- Train and hold workshops on research tools and resources as well as IT cyberinfrastructure



Scientific Impact or Broader Impact:

- Computation Models for Beetles Microbiomes in Stratosphere
- Research in this project includes statistical and machine learning techniques for data analysis and has connected gut microbiomes to conditions such as depression, anxiety, obesity, and autism
- Integration of Process Models and Deep Learning Algorithms with Large Hydrological Datasets for Robust Groundwater Recharge Prediction

Metadata tag:

- https://www.gatech.edu
- https://www.sox.net
- We are coordinating with collaborators

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